

February 1, 2002

William G. Conway
Forest River, Inc.
P.O. Box 124
Goshen, IN 46527-0124

Re: Exempt Construction and Operation Status
039-15066-00564

Dear Mr. Conway:

The application from Forest River, Inc., received on November 20, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that your emission source, a dump trailer manufacturing plant located at 55135 CR 1, Elkhart, IN 46514-9765, is classified as exempt from air pollution permit requirements. The emission source consists of the following emission units:

- (a) Thirteen (13) natural gas-fired space heaters with a total rating of 1.04 million Btu per hour.
- (b) One (1) natural gas-fired air makeup unit rated at 1.8 million Btu per hour.
- (c) One (1) paint spray booth rated at 1.04 units per hour.
- (d) Metal inert gas (MIG) welding operations.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions from the painting operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

3. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions from the welding operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

For a process weight rate of 1.7 tons per hour, the equation states an emission limit of 5.85 pounds of particulate matter per hour.

4. Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coating delivered to the applicator in the paint spray booth shall be limited to 3.5 pounds of VOC per gallon of coating less water for extreme performance coatings. This limit applies because the products will be used outdoors.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

This exemption letter is the first air approval issued to this source. An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. Any change or modification which may increase the potential volatile organic compound emissions from this emission source to ten tons per year or more, or increase the potential particulate matter emissions from this emission source to five tons per year or more, must be approved by the Office of Air Quality (OAQ) before such change may occur.

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ARD

cc: File - Elkhart County
Elkhart County Health Department
IDEM - Northern Regional Office
Air Compliance Section Inspector - Paul Karkiewicz
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	Forest River, Inc.
Source Location:	55135 CR 1, Elkhart, IN 46514-9765
County:	Elkhart
SIC Code:	3792
Application No.:	039-15066-00564
Permit Reviewer:	Allen R. Davidson

On November 20, 2001, the Office of Air Quality (OAQ) received an application from Forest River, Inc. for a dump trailer manufacturing plant. The emission source consists of the following emission units:

- (a) Thirteen (13) natural gas-fired space heaters with a total rating of 1.04 million Btu per hour.
- (b) One (1) natural gas-fired air makeup unit rated at 1.8 million Btu per hour.
- (c) One (1) paint spray booth rated at 1.04 units per hour.
- (d) Metal inert gas (MIG) welding operations.

History

This applicant has several emission sources located throughout Elkhart County. OAQ has determined that the SIC code for operations at this location differs from other Forest River operations in proximity to this location. This location is being treated as a separate emission source.

This application is the first received for this emission source.

Enforcement Issues

There are no enforcement actions pending against this emission source.

Recommendation

The staff recommends to the Commissioner that the emission source be issued an exemption letter. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on November 20, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. (4 pages)

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	4.21
PM-10	4.21
SO ₂	0
VOC	8.4
CO	1.0
NO _x	1.2

HAP's	Potential To Emit (tons/year)
Xylene	6.2
TOTAL	6.21

The potential to emit (as defined in 326 IAC 2-7-1(29)) volatile organic compounds (VOC) is less than ten tons per year and the potential to emit particulate matter (PM) is less than five tons per year. Therefore, the application does not require review under 326 IAC 2-5.1 and can be classified as exempt under 326 IAC 2-1.1-3.

This is not a major source for PSD or Emission Offset because the potential to emit every attainment pollutant is less than the significant levels. Therefore, pursuant to 326 IAC 2-2, 326 IAC 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment (maintenance)
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Elkhart County has also been classified as attainment or unclassifiable for all other pollutants. Therefore, emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source does not have potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because:

- (a) Although it is located in one of the eight counties listed in the rule, it does not have the potential to emit more than ten (10) tons per year of volatile organic compounds or nitrogen oxides.
- (b) It does not have the potential to emit more than one hundred (100) tons per year of any other pollutant specified in the rule.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Air Makeup Units and Space Heaters

There are no state rules applicable to these facilities.

State Rule Applicability - Paint Spray Booth

326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)

This emission unit is subject to 326 IAC 8-2-9. Pursuant to 326 IAC 8-2-1 (Applicability), the rule is applicable since the volatile organic compound (VOC) emissions are greater than 15 pounds per day before controls.

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coating delivered to the applicator shall be limited to 3.5. pounds of VOC per gallon of coating less water for extreme performance coatings. This limit applies because the products will be used outdoors.

Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

Based on the MSDS submitted by the source and calculations made, the spray booth is in compliance with this requirement.

326 IAC 6-3-2 (Particulate Emissions Limitations)

This emission unit is subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Control equipment is not needed in order to comply with this limit.

State Rule Applicability - Welding Operations

326 IAC 6-3-2 (Particulate Emissions Limitations)

This emission unit is subject to 326 IAC 6-3-2. Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Control equipment is not needed in order to comply with this limit.

Conclusion

The construction and operation of these facilities shall be subject to the conditions of the attached exemption letter, No. 039-15066-00564.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: Forest River, Inc.
Address City IN Zip: 55135 C.R. 1, Elkhart, IN 46514-9765
ID: 039-15066-00564
Reviewer: Allen R. Davidson
Date: 02/01/02

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

2.840

24.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.1	0.0	1.2	0.1	1.0

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.612E-05	1.493E-05	9.329E-04	2.239E-02	4.229E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	6.220E-06	1.368E-05	1.741E-05	4.727E-06	2.612E-05

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factor: confirm that the correct factor is used (i.e., condensable included/not included).

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Forest River, Inc.
Address City IN Zip: 55135 C.R. 1, Elkhart, IN 46514-9765
ID: 039-15066-00564
Reviewer: Allen R. Davidson
Date: 02/01/02

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	Lb VOC/gal solids	Transfer Efficiency
N-7618 Black Hi Solid Gloss	10.53	33.14%	0.0%	33.1%	0.0%	0.00%	0.50000	1.040	3.49	3.49	1.81	43.55	7.95	4.01	ERR	75%
Xylene	7.26	100.00%	0.0%	100.0%	0.0%	0.00%	0.01350	1.040	7.26	7.26	0.10	2.45	0.45	0.00	ERR	100%

State Potential Emissions	Add worst case coating to all solvents	1.92	46.00	8.39	4.01
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METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

The following calculations determine the emission limit under 326 IAC 6-3-2:

$$E = 4.1 * (1.7 ^ {0.67}) = 5.85 \text{ lb/hr (will comply)}$$

$$5.85 \text{ lb/hr} * 8760 \text{ hr/yr} / 2000 \text{ lb/ton} = 25.62 \text{ ton/yr}$$

[illegible]

6.20	0.00	0.00	0.00	0.00	0.00	0.00
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$$\text{HAPS emission rate (tons/yr)} = \text{Density (lb/gal)} * \text{Gal of Material (gal/unit)} * \text{Maximum (unit/hr)} * \text{Weight \% HAP} * 8760 \text{ hrs/yr} * 1 \text{ ton}/2000 \text{ lbs}$$

HAP#1 =	Xylenes
HAP#2 =	n/a
HAP#3 =	n/a
HAP#4 =	n/a
HAP#5 =	n/a
HAP#6 =	n/a
HAP#7 =	n/a

Company Name: Forest River, Inc.
Address City IN Zip: 55135 C.R. 1, Elkhart, IN 46514-9765
ID: 039-15066-00564
Reviewer: Allen R. Davidson
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PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc				0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	20	0.21		0.0055	0.0005			0.023	0.002	0.000	0	0.002
Stick (E7018 electrode)				0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene				0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane				0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**				0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.02				0.00
Potential Emissions lbs/day								0.55				0.05
Potential Emissions tons/year								0.10				0.01

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document, "Welding and Flame Cutting". See Rebecca Mason if you need a copy.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.